What is Claimed is:

1   1.   A telecommunications interference reduction

2   system for detecting a received signal, said received

3   signal having a control part and a data part therein,

4   said system comprising:

5   a single user detection unit for detecting said

6   control part of said received signal, said single user

7   detection unit transmitting control information based

8   upon said received signal; and

9   a data detection unit for detecting said data part

10   of said received signal, said data detection unit

11   receiving said control information from said single user

12   detection unit, thereby facilitating said detection by

13   said data detection unit of said data part of said

14   received signal.

1   2.   The system according to claim 1,   further

2   comprising a demultiplexer for separating said received

3   signal into said control part and said data part.

1   3.   The system according to claim 2, wherein the

2   demultiplexer   comprises   an   In-phase/Quadrature

3   demultiplexer.

1   4.   The system according to claim 1, wherein said

2   control   part   of   said   received   signal   comprises   a

3   dedicated physical control channel (DPCCH).

1   5.   The system according to claim 1, wherein said

2   data part of said received signal comprises a dedicated

3   physical data channel (DPDCH).

1   6.   The system according to claim 1, wherein said

2   single user detection (SUD) unit comprises an adaptive

3   filter.

1   7.   The system according to claim 6, wherein said

2   control information comprises channel estimates.

1   8.   The system according to claim 1, wherein said

2   single user detection (SUD) unit comprises:

3   a despreader for despreading said control part of

4   said received signal using a spreading sequence;

5   a measuring device for measuring a Signal-to-

6   Interference Ratio (SIR) of said despread control part of

7   said received signal; and

8   a calculating device for calculating a new spreading

9   sequence based on said SIR.

1   9.   The system according to claim 8, wherein said

2   despreader uses said new spreading sequence to despread

3   said control part of said received signal.

1   10. The system according to claim 8, wherein said

2   calculating device comprises an adaptive algorithm, said

3   adaptive algorithm adjusting coefficients to maximize

4   said SIR.

5

1   11.   The system according to claim 1, wherein said

2   data detection unit comprises a multi-user detection

3   unit.

1   12.   The system according to claim 1, wherein said

2   data detection unit comprises a multi-stage multi-user

3   detection unit.

1   13.   The system according to claim 1, wherein said

2   data detection unit comprises a single user detection

3   unit.

1   14.   An interference reduction method for detecting

2   a received signal, said received signal having a control

3   part and a data part therein, said method comprising the

4   steps of:

5   a first detecting step for detecting said control

6   part of said received signal;

7   transmitting control information based upon the

8   detected control part of said received signal; and

9   a second detecting step for detecting said data part

10   of said received signal, said transmitted control

11   information being used to facilitate detection of said

12   data part of said received signal.

1   15. The method according to claim 14, further

2   comprising, prior to said first detecting step, the step

3   of:

4   separating said received signal into said control

5   part and said data part.

1   16. The method according to claim 15, wherein said

2   separating step comprises separating said signal into an

3   In-phase and a Quadrature components.

1   17. The method according to claim 14, wherein said

2   control part of said received signal comprises a

3   dedicated physical control channel (DPCCH).

1   18. The method according to claim 14, wherein said

2   data part of said received signal comprises a dedicated

3   physical data channel (DPDCH).

1   19. The method according to claim 14, wherein said

2   first detecting step detects said control part of said

3   received signal using an adaptive algorithm.

1   20. The method according to claim 14, wherein said

2 first detecting step further comprises the steps of:

3   despreading said control part of said received

4 signal using a spreading sequence;

5   measuring a quality factor of said despread control

6 part of said received signal; and

7   calculating a new spreading sequence based on said

8 quality factor.

1   21. The method according to claim 20, wherein said

2 step of despreading comprises despreading said control

3 part of said received signal using said new spreading

4 sequence.

1   22. The method according to claim 20, wherein said

2 quality factor comprises a Signal-to-Interference Ratio

3 (SIR) factor.

1   23. The method according to claim 20, wherein said

2 step of calculating comprises an adaptive calculating

1   algorithm having adjustable adaptive coefficients,

2   thereby maximizing said quality factor.

1   24.   The system according to claim 14, wherein said

2   data detection unit is selected from the group consisting

3   of: a multi-user detection unit, a multi-stage multi-user

4   detection unit, a single user detection unit, and any

5   conventional detection unit.